



OASI News

The newsletter of the Orwell Astronomical Society



A small but select group in Holywells Park for their Family Day.

Photo M.R-H

Trustees: Mr Roy Adams Mr David Brown Mr David Payne
Honorary President: Dr Allan Chapman D.Phil MA FRAS

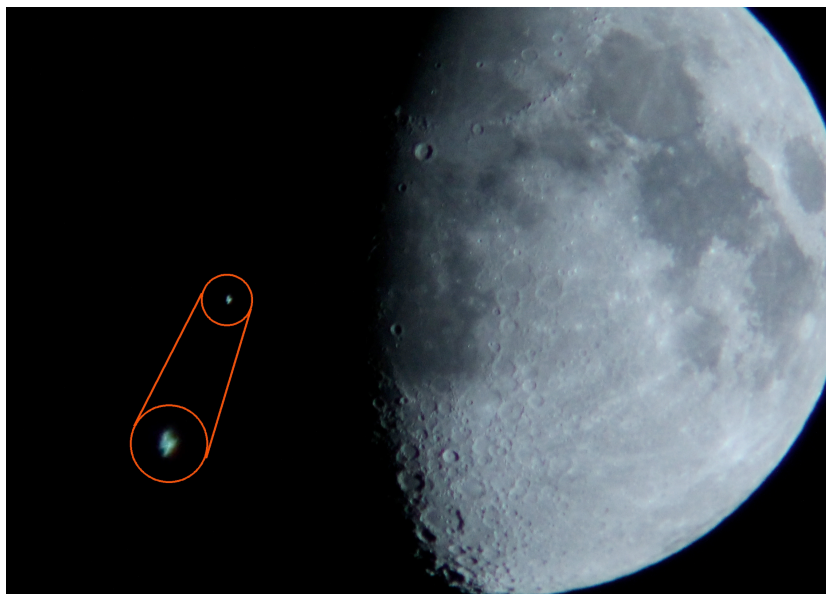
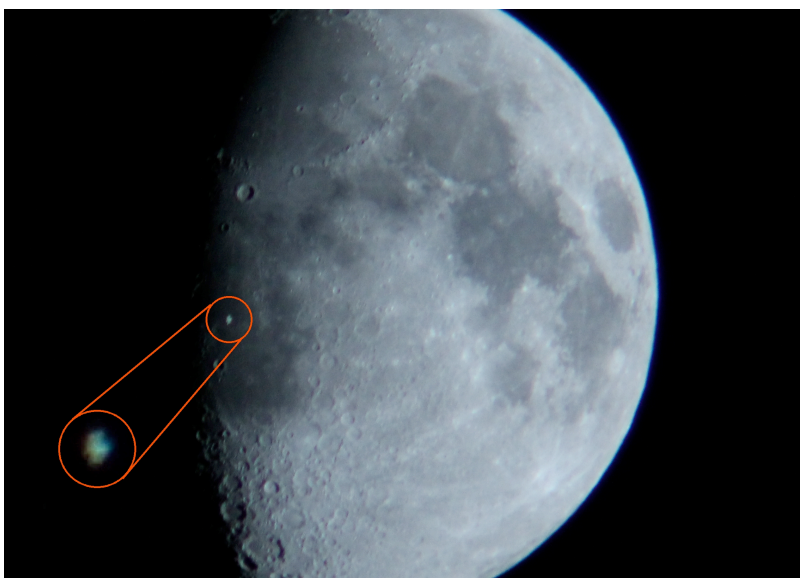
The ISS transits the moon 12th Aug 2016

Alan Smith

All frames timed at 2016 08 12
21:28:46 as the complete transit
took around $\frac{3}{4}$ of a second !

Canon 1100D with 400mm f6.3
telephoto with 3x converter.

Tripod mounted, hand tracked from
my back garden at Grundisburgh.



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Society Contact details

Observatory (meeting nights only)

07967 519249

Email queries: info@oasi.org.uk

Facebook: <https://www.facebook.com/groups/445056098989371/>

Twitter: @OASlpswich

The OASI Facebook pages are now proving very popular. Several non-members are active contributors.

Please send material for the OASI web site and newsletter e.g. observations, notices of events, general interest articles, to

news@oasi.org.uk

Other contact details will be issued to members on a separate printed list or emailed directly to those who only receive the e-version of the News.

Access into the School Grounds and Observatory Tower

Please use the third gate into the school grounds by the gym.

Areas out of Bounds

Access to the Observatory is **only via the black door** at the foot of the Observatory tower, which leads to the staircase and thence to the spiral staircase up to the Observatory. If the black door is locked, please phone the observatory mobile, 07967 519249 during meeting hours.

Please do NOT explore other routes. When in doubt, ask or call the Observatory mobile.

Remember this is a school and straying into the main part of the school where the pupils reside would cause the society big problems and could see us losing the use of the observatory. Any member found to be anywhere other than the approved access route or the observatory area will face serious sanctions up to and including expulsion from OASI.

Please note that access time for all observatory member nights is after 20:15

The key to the toilets in the school gym is located in the seating area in the Belvedere room.

Articles for OASI News

News, pictures and articles for this newsletter are always welcome. Please send them to

news@oasi.org.uk

The CLOSING date is the 15th day of the month

Please submit your articles in any of the following formats:–

Text: txt, rtf, rtf, doc, docx, odt, Pages, pdf

Spreadsheets: xls, xlsx, OpenOffice/LibreOffice, Numbers

Images: tiff, png, jpg

Please send tables as separate files in one of the above formats.

If you don't feel up to writing a major article, perhaps you might write a short note for OASI News along the lines of *"This month I have mostly been observing/constructing/mending/reading/etc."*?

Articles win points! See page 13.

The full colour version is available from the OASI web site.

[Newsletter archive www.oasi.org.uk/NL/NL_form.shtml](http://www.oasi.org.uk/NL/NL_form.shtml)

Authors, please note that your articles will now be publicly available worldwide!

Reproducing articles from OASI News

If you plan to reproduce an article exactly as per OASI News then please contact the [Editor](#) – otherwise, as a matter of courtesy, please seek permission from and credit the original source/author. You may not reproduce articles for profit or other commercial purpose.

Committee 2016

Chairman	David Murton	Set overall agenda for OASI, Chair committee meetings, Press and publicity, Public appreciation of astronomy, Outreach activities.
Secretary	Roy Gooding	Outreach meetings (jointly with Chairman), observatory decoration.
Treasurer	Paul Whiting FRAS	Finance, Supervision of applications for grants, Visits by outside groups, Observatory tours, Public appreciation of astronomy (jointly with Chairman).
Committee	James Appleton	Committee meeting minutes, Web site
	Martin Cook	Membership, Tomline refractor maintenance & user testing
	Peter Richards	Lecture meetings, Email distribution lists
	Martin Richmond-Hardy	Newsletter
	John Wainwright	Equipment curator
	Mike Whybray	Astronomy Workshops, Child protection officer, Orwell Park School Astronomy Club.
	Avtar Nagra	Newbourne Observing Group
	Matt Leeks	Safety & security
Co-opted	Andy Wilshire	Librarian

Society Notices

Contacts

A printed list of Committee and other activity contacts is available from the Secretary or the Observatory. Email links are available in the A4 pdf version of this newsletter.

For general enquiries please email info@oasi.org.uk and your enquiry will be forwarded for action.

Next Committee Meeting

Tuesday 6 September 2016, Douglas Bader, Martlesham Heath, starting 8.00pm.

Signing in and out

Please ensure you sign in and out when visiting the Observatory and/or Newbourne.

This is for fire safety precautions and also provides an historic record.

Welcome New Members

OASI and BAA Events

For the latest event details, please see www.oasi.org.uk/Events/Events.php

There's a Google Calendar on the OASI web site with the latest dates (and corrections!). If you want to easily add OASI Events to your own computer/phone/tablet calendar application click this button on the website Events page



Download the OASI 2016 year planner from the web site. An A3 printer is advised.

For other astronomy news and astro pictures try our

Twitter feed <https://twitter.com/OASlpswich>

Facebook page <https://www.facebook.com/pages/Orwell-Astronomical/158256464287623>

Subscribe to the OASI Yahoo group by emailing oasi-subscribe@yahoogroups.com

Date and Time	Location	Contact	Event
Weekly, every Wednesday, 20:15	Orwell Park Observatory	Martin Cook, Roy Gooding	General observation (weather permitting) using a variety of telescopes. Entry via the third gate left. NOT the main gate
Monday 29 August	Alnesbourne Priory	Mike Norris	Solar observing (members only)
Sunday 4 September	Bentley Playing Field	Roy Gooding secretary@oasi.org.uk	Bentley Family Day
Monday 5 Sept from 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group Workshop: Bill Barton FRAS on 'Binocular Observing' + 'Sky Notes'.
Tuesday 6 Sept	Douglas Bader, Martlesham Heath	Roy Gooding	Committee meeting
Friday–Sunday 9 –11 September	Dundee	https://britastro.org	BAA Autumn Weekend Meeting <i>Stars: Theory, Physics and Effects.</i>
Friday – Sunday 9 –11 September	Horncastle, Lincolnshire	https://britastro.org	Horncastle Astronomy Weekend
Saturday 10 Sept	St Mary's church, Capel St Mary	David Murton chairman@oasi.org.uk	Public Star observing
Saturday 17 Sept 10:30–16:30	Burlington House, LONDON W1J 0DU	https://britastro.org	All of the learned societies based at Burlington House are participating in <i>Open House London 2016</i> . See page 15
Monday 19 Sept, 23:30	TBA	James Appleton info@oasi.org.uk	Field trip to observe graze of 87 Cet. More info.
Monday 19 Sept, from 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group

Date and Time	Location	Contact	Event
Friday 21 Sept 13:00	John Innes Centre Norwich		Dr. Matt Taylor of the European Space Agency Rosetta Mission
Saturday 24 Sept, 10:00 – 17:30	Burlington House, LONDON W1J 0DU	https:// britastro.org	BAA Observers' Workshop <i>Asteroids & Remote Planets</i>
Friday 30 Sept – Sunday 2 Oct	Kelling Heath, Norfolk		Kelling Star Party
Monday 03 October From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Tuesday 4 October	Orwell Park Observatory	Paul Whiting treasurer@oasi.org.uk	Observatory visit. Booking essential.
Saturday 08 October	Nowton Park, Bury St Edmunds	David Murton chairman@oasi.org.uk	Public access event. Star party to mark International Observe The Moon Night . Book a place via the West Suffolk website .
Friday 14 October 20:00	Methodist Church Hall Black Horse Lane, Ipswich	Pete Richards lectures@oasi.org.uk	Lecture Meeting. Roger Pickard (Director of Variable Star Section of the BAA), <i>Why Observe Variable Stars?</i>
Saturday 15 October	Chichester	https:// britastro.org	BAA Back to Basics Workshop
Monday 17 October From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Friday 21 October 23:30	TBA	James Appleton info@oasi.org.uk	Field trip to observe graze of 20 Gem or 21 Gem. More info .
Wednesday 26 October, 17:30 – 20:00	Burlington House, LONDON W1J 0DU	https:// britastro.org	BAA Annual General Meeting
Friday 28 Oct – Sunday 30 Oct	Haw Wood Farm Caravan Park, Hinton, Saxmundham. IP17 3QT	www.hawwoodfar m.co.uk	Haw Wood Star Party www.brecklandastro.org.uk/ bas-star-parties/
Monday 31 October From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Friday 4 November	Felixstowe Golf Club	David Murton chairman@oasi.org.uk	Meal + observing
Tuesday 8 November	Orwell Park Observatory	Paul Whiting treasurer@oasi.org.uk	Observatory visit. Booking essential.
Friday 11 November	Methodist Church Hall Black Horse Lane, Ipswich	Pete Richards lectures@oasi.org.uk	Lecture Meeting: Steve Hubbard & Malcolm Brown <i>"Aliens – Are they out there?"</i>

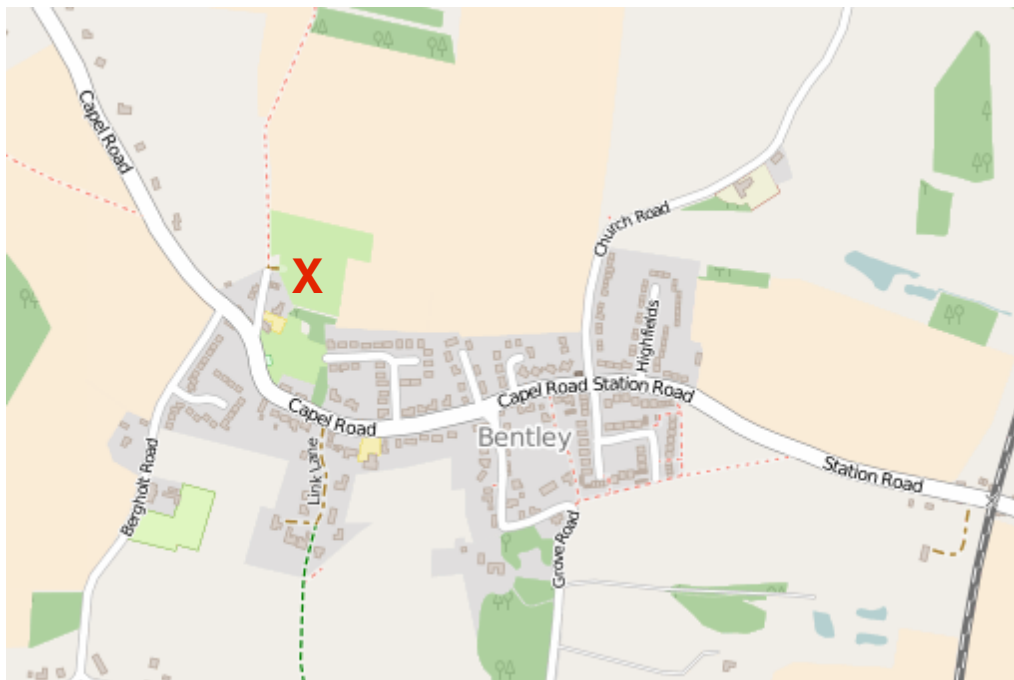
Date and Time	Location	Contact	Event
Monday 14 November From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Saturday 19 Nov	Cedarwood School, Kesgrave	David Murton chairman@oasi.org.uk	Public Observing
Monday 28 November From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Tuesday 13 December 20:00	Orwell Park Observatory	Paul Whiting treasurer@oasi.org.uk	Observatory visit. Booking essential.
Monday 12 December From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Wednesday 14 Dec	TBD but probably The Newbourne Fox.	Roy Gooding secretary@oasi.org.uk	Christmas Meal.
Monday 19 December From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group Christmas event?
Monday 22 December 06:36	TBA	James Appleton info@oasi.org.uk	Field trip to observe graze of Hipparcos 63099. More info.
2017			
Tuesday 10 January 20:00	Orwell Park Observatory	Paul Whiting treasurer@oasi.org.uk	Observatory visit. Booking essential.
Tuesday 7 February 20:00	Orwell Park Observatory	Paul Whiting treasurer@oasi.org.uk	Observatory visit. Booking essential.
Tuesday 14 March 20:00	Orwell Park Observatory	Paul Whiting treasurer@oasi.org.uk	Observatory visit. Booking essential.
Tuesday 11 April 20:00	Orwell Park Observatory	Paul Whiting treasurer@oasi.org.uk	Observatory visit. Booking essential.
Saturday 29 July	UCS, Ipswich	David Murton chairman@oasi.org.uk	OASI 50th Anniversary
21 August	USA	www.greatamericaneclipse.com	Total solar eclipse

Public Solar & Star Parties organised by OASI in 2016

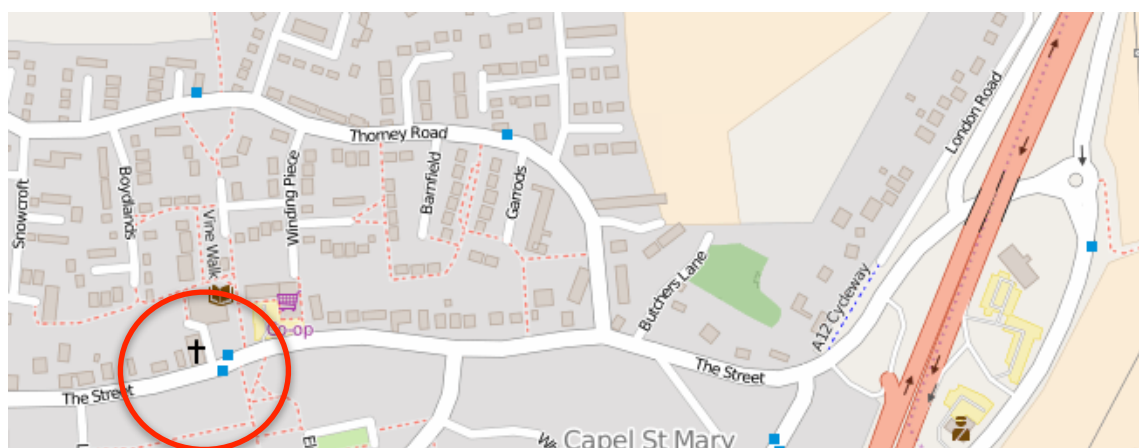
Alnesbourne Priory Solar Event on Bank Holiday Monday 29th August.

Set up about 10am . Please note this is a **members-only** event for Priory Park residents.

Bentley Family Day – Sunday 4th September.



Capel Star Party – Saturday 10 September at St Mary's Church



We plan to start at 7pm with a talk by David Murton, then our hosts will be selling hot dogs and hot drinks which should take us nicely up to 8.30 when, weather permitting, we will be able to go outside and look at "the night sky"

Nowton Park Star Party – Saturday 8 October

<https://www.whatsonwestsuffolk.co.uk/whats-on/event/2794/the-nowton-park-star-party>

International Observe the Moon night (InOMN) is an annual worldwide public event that encourages observation, appreciation, and understanding of our Moon and its connection to NASA planetary science and exploration.

The moon will be waxing gibbous on the night and become a Supermoon on 16 October.

Other Star Parties that OASI members may be attending

Kelling Heath Star Party – 30 Sept – 2 Oct

See <http://starparty.las-astro.org.uk/index.php> for the Autumn Equinox Sky Camp.

Haw Wood Star Party Friday – 28–31 October

Haw Wood is a [Dark Sky Discovery](#) site. Naked eye visibility is magnitude 5.73; with averted vision, 5.99; best SQM reading 21.75.

[Haw Wood Farm](#) Caravans and Camping Hinton

Saxmundham IP17 3QT

David Murton plans to take the Millennium Telescope.

Newbourne Observing Group

Avtar Nagra nog@oasi.org.uk

We normally meet at Newbourne Village Hall, Mill Lane, IP12 4NP

The Newbourne Observing Group (The NOGs) is a good place to start for beginners. If you are thinking of buying a scope or binoculars, come and try before you buy and talk to owners about the strengths and weaknesses of particular models. If you've already splashed the cash, bring your new scope along to use or for advice on setting-up and adjustment. All welcome, with or without telescopes.

Newbourne Observation Group Stargazer's guide

On the first meeting each month Bill Barton will give a short presentation of what can be viewed in the following 4 weeks. For armchair stargazers (on those cloudy nights) there is a small branch of the OASI Library held at Newbourne and a copy of the full catalogue.

NOG Meetings in 2016

5(W,S) & 19 Sept 3(S), 17 & 31(W) Oct 14(S) & 28 Nov 12(S) & 19 Dec

We open up for all meetings at 7pm. Star Guide (S) and Workshops (W) start at 8pm.

Please check the web site diary for any changes during the year.

Astronomy Workshops

Contact Mike Whybray

Location: Newbourne Village Hall IP12 4NP

Doors open at 7:00pm.

Workshops start at 8:00pm

If you are a new OASI member, or haven't been to one of these informal workshops before, they are a mixture of events of different characters including beginners talks, interactive workshops, films, etc., suitable for all. They are also a chance to chat with other members over a cup of tea and a biscuit, in a venue rather warmer than the observatory dome on a winter's night!

Given a clear night, we can make use of the field for a workshop or continue afterwards with some observing – something not possible at the previous venue, Nacton village hall.

5 Sept Bill Barton FRAS on 'Binocular Observing' + 'Sky Notes'.

31 Oct: Mike Whybray will organise a workshop at Newbourne on assembly and use of the Millennium Telescope.

Do you have a subject you could workshop? You could do a short one, or share the effort with a partner. Drop Mike Whybray a line! workshops@oasi.org.uk

Small Telescope Observing Nights (STONs)

Contact: Paddy O'Sullivan and Dave Robinson Email: ston@oasi.org.uk

These evenings enable members to gain hands-on experience of using the society's telescopes and to practice locating astronomical objects. They are organised by Paddy O'Sullivan and David Robinson and currently take place at Orwell Park Observatory. They are held on the first Tuesday of the month, starting at 20:15, *but only when there is a demand from members*. To ensure there will be an organiser in attendance, members should email the above address.

If members cannot gain access due to lack of Fob, etc., please ring the observatory telephone number **07967 519249**.

Lecture Meetings

Contact: Peter Richards lectures@oasi.org.uk

These take place in [Museum Street Methodist Halls](#), Upstairs room, Black Horse Lane, Ipswich

There is some parking at the venue but if there is no space at the venue you can drive to the end of Black Horse Lane and turn left to find a pay and display car park which charges (at the time of writing) £2 for parking between 6pm and 6am. There is also the spiral car park by the New Wolsey theatre.

Friday 14 October: Roger Pickard "Why observe variable stars?"

Roger is director of the variable stars section of the BAA.

November 11: Steve Hubbard & Malcolm Brown "Aliens – Are they out there?"

DASH Astro Events – 2016

See <http://dash.moonfruit.co.uk> for the latest details.

All DASH Astro observing sessions will take place at WESTLETON COMMON. ASOG observing sessions and locations may be arranged at the time of observation.

Unless stated all group meetings will take place at WESTLETON VILLAGE HALL from 7:30 pm

Observing sessions:

Nights: 1 & 29 Oct, 26 Nov

Solar observing: 2 July, 6 Aug, 3 Sept



The Night Sky in September

Martin RH

All event times given are for the location of Orwell Park Observatory 52.0096°N, 1.2305°E

Other than for occultations, times are in BST (UTC+1).

Moon

Source: <http://heavens-above.com/moon.aspx>

New Moon	1 st Quarter	Full Moon	Last Quarter
01 Sept 10:03	09 Sept 12:49	16 Sept 20:05	23 Sept 10:56
01 Oct 01:11			

Sun, Moon and planets

Source: <http://heavens-above.com/PlanetSummary.aspx>

Object	Date	Rise	Set	Mag.	Notes
Sun	1	06:07	19:41		Sept 22, 15:21: Autumn equinox
	30	06:55	18:35		
Moon	1	06:04	19:44		
	30	06:05	18:35		
Mercury	1	08:17	19:41	1.5	Sept 13: Inferior conjunction
	30	05:13	18:08	-0.5	Sept-28: Maximum western elongation and perihelion
Venus	1	08:23	20:21	-3.8	
	30	09:56	19:22	-3.8	
Mars	1	15:28	22:31	-0.2	
	30	14:58	21:51	0.1	
Jupiter	1	07:57	20:13	-1.5	Sept 26: Superior conjunction
	30	06:38	18:30	-1.5	
Saturn	1	14:38	22:49	1.2	
	30	12:52	20:59	1.3	
Uranus	1	20:54	10:25	5.8	
	30	18:58	08:26	5.7	
Neptune	1	19:43	06:17	7.8	Sept 02: Opposition
	30	17:47	04:19	7.8	
(Pluto)	1	17:14	01:16	14.2	For those with big aperture telescopes (the Millennium scope?), Pluto was at opposition on 7 July
	30	15:20	23:17	14.2	

Meteor Showers

Source: BAA Handbook 2016 p97-99

Shower	Limits	Maximum	ZHR at Max	Notes
Piscids	Sept – Oct	Sept 8	10	A multiple-radiant ecliptic complex with low rates
		Sept 20	5	
		Oct 13	?	

Occultations during September 2016

James Appleton

The table lists occultations during the month, of stars to magnitude 5.0, where the circumstances are favourable. The events should be readily visible in small telescopes or binoculars. The first two columns list the date and time (UT) of the occultation. Column three gives the phenomenon: 'D' denotes a disappearance and 'R' a reappearance. The table lists circumstances of disappearances and reappearances as dictated by the visibility of each phenomenon (determined by altitude, lunar phase, etc). Column four details the lunar phase ('+' for waxing and '-' for waning). Columns five and six give the altitude of the Sun and the star, both in degrees. (A negative solar altitude means that the Sun is below the horizon.) Columns seven and eight provide the star's magnitude and catalogue number.

The data relates to Orwell Park Observatory, but will be similar at nearby locations.

Please note that **times are shown in UTC** not BST.

Date	Time (UT)	D/R	Lunar Phase	Sun Alt(°)	Star Alt(°)	Mag	Star
11 Sep	19:51:40	D	0.72+	-15	19	6.3	V4198 Sgr
11 Sep	20:22:30	D	0.72+	-19	18	6.6	ZC 2794
11 Sep	21:00:52	D	0.73+	-23	17	7.0	Hip 94062
21 Sep	22:28:47	D	0.66-	-35	12	4.7	sigma 2 Tau
	23:20:28	R		-37	20		
24 Sep	01:04:46	D	0.42-	-36	20	5.2	26 Gem
	02:00:34	R		-31	28		

On 20 September at 00:28 there is a southern limit graze of the magnitude 4.3 star 87 Cet. Details can be found on the OASI website: http://www.oasi.org.uk/Occs/Occ_summary_2016.php. An observing trip will be organised if weather conditions are favourable: details will be provided via the OASI email list.

Paul's Astronomy Podcast for September

Paul Whiting FRAS Podcast, September 2016 www.oasi.org.uk/2016_09_pod.mp3

Bill's Radio Broadcast

ICRFM (Ipswich Community Radio) 105.7 MHz at about 08:25 in the morning of the first Wednesday of each month. I aim to cover what there is to see in the sky and then a little bit on something topical.

ICRFM is also available to listen to over the Internet and there is a listen again option on their website. <http://www.icrfm.com>

David's Radio Broadcast

4th Monday of the month, 2.40pm on the Lesley Dolphin show on BBC Radio Suffolk.

Visible ISS passes $\geq 15^\circ$ max altitude

Martin RH

Source: <http://heavens-above.com/PassSummary.aspx?satid=25544>

Times are BST. Predictions are approximate (17 August) due to craft adjustments. Check the day before.

Date	Mag	Start			Highest point			End		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
06 Sep	-0.9	05:40:13	10°	S	05:42:29	18°	SE	05:44:45	10°	E
08 Sep	-1.8	05:29:12	10°	SSW	05:32:04	29°	SSE	05:34:57	10°	E
09 Sep	-1.3	04:37:39	16°	S	04:38:57	19°	SE	04:41:23	10°	E
10 Sep	-2.6	05:19:09	14°	SW	05:21:42	45°	SSE	05:24:51	10°	E
11 Sep	-2.2	04:27:59	30°	S	04:28:29	31°	SSE	04:31:27	10°	E
12 Sep	-0.8	03:36:48	16°	ESE	03:36:48	16°	ESE	03:37:53	10°	E
12 Sep	-3.2	05:09:23	21°	WSW	05:11:22	65°	SSE	05:14:36	10°	E
13 Sep	-2.9	04:18:10	48°	SSE	04:18:10	48°	SSE	04:21:15	10°	E
13 Sep	-3.3	05:51:06	10°	W	05:54:23	86°	S	05:57:39	10°	E
14 Sep	-0.7	03:26:55	16°	E	03:26:55	16°	E	03:27:50	10°	E
14 Sep	-3.4	04:59:30	29°	WSW	05:01:02	81°	S	05:04:18	10°	E
15 Sep	-2.8	04:08:16	53°	ESE	04:08:16	53°	ESE	04:10:57	10°	E
15 Sep	-3.4	05:40:51	10°	W	05:44:03	82°	S	05:47:20	10°	E
16 Sep	-0.4	03:17:01	14°	E	03:17:01	14°	E	03:17:33	10°	E
16 Sep	-3.4	04:49:37	40°	W	04:50:41	86°	S	04:53:57	10°	E
17 Sep	-2	03:58:24	38°	E	03:58:24	38°	E	04:00:34	10°	E
17 Sep	-3.3	05:30:59	14°	W	05:33:41	67°	SSW	05:36:55	10°	ESE
18 Sep	-3.5	04:39:49	61°	WSW	04:40:18	80°	S	04:43:33	10°	ESE
19 Sep	-1.2	03:48:43	24°	E	03:48:43	24°	E	03:50:10	10°	E
19 Sep	-3	05:21:19	21°	W	05:23:11	47°	SSW	05:26:20	10°	SE
20 Sep	-3	04:30:19	54°	SSE	04:30:19	54°	SSE	04:33:04	10°	ESE
21 Sep	-2.4	05:12:01	28°	SW	05:12:36	30°	SSW	05:15:30	10°	SE
22 Sep	-1.2	04:21:16	19°	SE	04:21:16	19°	SE	04:22:24	10°	SE
23 Sep	-1.1	05:03:20	14°	S	05:03:20	14°	S	05:04:13	10°	S
30 Sep	-1.8	20:15:39	10°	SSW	20:17:36	22°	S	20:17:36	22°	S

Iridium flares

Too many to list but see <http://heavens-above.com/IridiumFlares.aspx>

OASI Member of the Year Competition

- Open to any non committee member (at time points earned)
- Runs from 1st September to 31st August each year
- Winner gets a free membership for the following year
- It is the members responsibility to check that they have been credited the points for a particular event

Activity	Points	Activity	Points
Helping at an OASI outreach event	10	Writing a newsletter article (per page)	3
Giving a workshop/monthly sky notes	20/10	Introducing a new member	5

The final scores are in. Congratulations to Bill Barton!

	Adam Honeybell	10	
	Alan Smith	117	
	Andy Gibbs	81	
	Bill Barton	196	
	Charlie Green	20	
	Gerry Pilling	3	
	Jeremy Startup	20	
	Joe Startin	53	
	Joe Walsh	10	
	Mike Nicholls	86	
	Mike Norris	33	
	Mike O'Mahoney	50	
	Neil Short	6	
	Nicky Richards	60	
	Pete Richards	30	
	Richard Gruber	10	
	Tina Hammond	20	

Notes from the BAA electronic bulletin

Royal Astronomical Society Apartment Public Opening Times

17 September 10:30–16:30. All of the learned societies based at Burlington House are participating in *Open House London 2016*, and will each provide access to areas which are not normally accessible to visitors. RAS staff will be on hand to explain the architectural features of the building, the history of the society, and exhibit some of our fascinating artifacts. This will include some of the historically significant items in our [BAA] library.

24 September: The Asteroids and Remote Planets Workshop, free to BAA members, will take place at Burlington House, Piccadilly and details of which have also been featured in the current Journal (p.258) - see also <https://britastro.org/node/7189> . There will be lots of practical topics covered on the day, including some which overlap with techniques used in the study of comets. Attendees are welcome to contribute by way of a short talk, or by participation in discussions. Please note that, if you are planning to attend, you will need to first book by contacting the BAA Office on 020 7734 4145 or office[at][britastro.org](mailto:office@britastro.org) - Please book early so as to confirm your place. Thank you.

Richard Miles

Sky Notes

Recently I wrote to local astronomical societies and other organisations to let them know that the British Astronomical Association is making available videos of our Sky Notes talks presented at BAA meetings. I hope you and your members had a chance to view the video from our May meeting. It's still available on YouTube here: <https://youtu.be/G9P6AymgC58>

We will release the next video in the autumn, but in the meantime I thought you might like to read our latest article on what to look out for in the night sky during August and September. It includes a guide to the main constellations that are visible, notes about the planets, and upcoming occultations. This appears in the current Journal of the BAA, but you can freely read it online on our website here:

<https://www.britastro.org/node/7855>

I would be grateful if you would share this email containing the link to the article with your members. I hope you all enjoy reading it.

The BAA aims to support all amateur astronomers, whether members of the BAA or not. As ever, if there are ways you think the BAA can help support local clubs and societies and amateur astronomers in general please do let me know.

If individuals or groups would like to receive the link to the Sky Notes on a regular basis please email <webmaster@britastro.org>.

Jeremy Shears, BAA President

Donations

We are very grateful to Bruce R. Bloom for the donation of a 1970, 11" Celestron reflecting telescope with all the necessary accessories, along with the astronomy books listed below.

OASI Library

Andy Willshire

We have recently had a kind donation of a handful of interesting books. In order for all members to have a look at these titles we have added them to this month's magazine. If you ever decided that you would like to construct your own telescope, some of these books are what you have been hanging on for.

For those of you waiting with baited breath for the next addition delving into the old books that we possess, this will hopefully appear in a later edition of the magazine.

The letters in the Label column stand for historical breakdown of the library books.

A	Moon	J	Comets & meteorites
B	Radio astronomy	K	Reference books
C	Pre 1960	L	Solar system
D	History of astronomers	M	Observing
E	Telescopes	N	Astrophotography
F	Space travel	O	Orbits
G	Stars & our Sun	P	Cosmology
H	Yearbooks	Q	Atlases & Starcharts
I	Younger readers		

Recent Acquisitions

Title	Author	Category	Label	Date	Description
Advanced Telescope Making Techniques	Mackintosh, Allan	Telescopes and optics	E	1986	Volumes 1&2. Optics and Mechanical
How to Make a Telescope	Texereau, Jean	Telescopes and optics	E	1984	Telescope making
Amateur Telescope Making	Ingalls, Albert	Telescopes and optics	E	1996	Volumes 1 to 3.
Star Testing Astronomical Telescopes	Suiter, Harold, S	Telescopes and optics	E	1994	A manual for Optical Evaluation and adjustment
Black Holes and Warped Spacetime	Kaufmann, William,J, iii	Reference	K	1979	All you ever wanted to know about black holes
Astronomy with your personal computer	Duffett-Smith, P.	Reference	K	1988	Subroutines for computer code to enter into computer
Stars & Planets	Ridpath, Ian:Tirion Wil	Observing	M	1993	Collins pocket Guide, over 100 Sky charts
Stars and Planets	Ridpath , Ian : Tirion,Wil	Observing	M	1984	Collins pocket Guide, over 100 Sky charts
Telescopes and techniques	Kitchin, Chris	Observing	M	2003	An Introduction to Practical Astronomy
The Messier Album	Mallas ,John,H: Kreimer,Evered	Observing	M	1987	The Messier Catalogue in small book form
Touring the Universe through Binoculars	Harrington, Philip, S	Observing	M	1990	A complete Astronomers Guidebook
How to Use an Astronomical Telescope	Muirden.James	Observing	M	1988	A Beginners Guide to Observing the Cosmos
Seasonal Star Charts	USA	Observing	M	1972	A Completer Guide to the Stars
Sight Reduction Tables	Cornell Maritime press	Observing	M	1982	Sight reduction tables for sun, moon and planets. Facilitates celestial navigation at sea or in the air
SkyAtlas	Tirion, W.	Observing	M	1987	Comprehensive set of star charts
Night Sky Photography	Arnold,H,J,P	Astro-photography	N	1988	Basic Guide for beginners about astrophotography. Foreward by Sir Patrick Moore

The Brazilian Flag

Bill Barton

Those of you who have recently been enjoying the Olympic Games from Rio de Janeiro may have noticed a star design in the middle of the Brazilian flag. It turns out that this isn't just done for effect, but is a highly accurate depiction of the sky with great significance to the Brazilian people.

The image represents the sky over Rio at 08:30 in the morning of the 15th November 1889, the date when the monarchy was overthrown by a military coup and the present



Republic founded. Each constituent state is represented by a star. Political reorganisation has resulted in an increase in the number of states and thus the number of stars over the years. The original had twenty-one stars and revisions to twenty-two occurred in 1960 and twenty-three in 1968. The current version, with twenty-seven stars came into use on the 11th May 1992. The inclusion and necessary accuracy in positioning of so many stars makes this flag one of the most complex in the world.

The stars are depicted as seen from the outside of the celestial globe (i.e. reversed as seen from the ground). The motto "Ordem e Progresso" (Portuguese for "Order and Progress") is written on a white band placed on the ecliptic plane (the line across the sky on which the Sun, Moon and Planets are to be found). The 'South Pole star' (sigma Octantis) around which the whole sky appears to turn is included to demonstrate the stability of the Federal District which includes the capital Brasília.

Working in approximate order from left to right on the flag the constellations are:-

1. Canis Minor (only Procyon, alpha Canis Minoris, depicted)
2. Canis Major (Sirius, Mirzam, Muliphen, Wezen and Adhara. That is alpha to epsilon Canis Majoris)
3. Carina (only Canopus, alpha Carinae depicted)
4. Virgo (only Spica, alpha Virginis shown) and the only star above (to the north) the motto band. However around one hundred and thirty years of precession now means that this star is now south of the ecliptic. It represents the Pará state which lies partially north of the terrestrial equator)
5. Hydra (alpha and gamma)
6. Crux Australis (alpha, beta, gamma, delta and epsilon)
7. Octans (only sigma, the south pole star shown)
8. Triangulum Australis (alpha, beta and gamma)
9. Scorpius (alpha, beta, epsilon, theta, iota, kappa, lambda and mu)

Of these Canis Minor, Canis Major, Virgo and Hydra are visible to us the UK, while only the northern part Scorpius can be seen from our latitude.

Astronomy is Looking Up

Paul Whiting

Ipswich Institute are once again running an astronomy course starting in October. The course will be held in the Admiral's House, 13 Tower Street, Ipswich. Further details below and booking at 15 Tavern Street, Ipswich.

Mondays 18.30 - 20.30

With astronomy featuring more and more on our TV screens, have you ever wondered what it is all about? This introductory course will introduce the basics of a number of different facets of this interesting science and hobby. You do not need a telescope to take part (although you will probably want to get one afterwards!). You just need an enquiring mind.

- Course Tutor: Paul Whiting
- Course Duration: 10 weeks
- Course dates: 03 Oct – 05 Dec
- Half Term: 07 Nov
- Price: £71
- Ipswich Institute Members Price: £47
- Concessions*: £52

*The concessionary rate is available to anyone in receipt of means-tested benefits.

ISS approaching the Moon's terminator

Alan Smith



A pic of the ISS crossing the lunar terminator at 21:28:46hrs tonight (12/8/16). Acnon 1100D, 400mm telephoto (with x3 converter). ISO 1600, 1/250sec.

Meteor observations 11–13 August

Compiled by James Appleton

See web site <http://www.oasi.org.uk/Obsvns/meteors/meteors.php> for larger images.

Mike Norris, Ipswich. On 12 August, the forecast was for cloud by midnight so I did an early watch in my front garden - not the darkest venue! I saw five bright Perseids at the following times (UT): 21:51, 22:04, 22:10, 22:20 and 22:41. High cloud then rolled in and I retired.

Mike & Andrea Whybray, Nacton. On the evening of 12 August, we saw seven Perseids between 21:30 and 22:05 UT from our back garden at Nacton, looking roughly NW. The sky was clear but contrast was not very good due to thin, high cloud plus the setting Moon.

Andy Gibbs, en route from Ipswich to Rugby. On the night of 11-12 August, I was driving a train from Ipswich to Rugby. At 21:00 UT, shortly after leaving Ipswich, the skies were mostly clear and I observed a conjunction of the Moon, Saturn, Mars and Antares. I first observed a Perseid at 23:15 UT, through the light pollution of London, when I was just north of Wembley. I then moved under clouds. North of Milton Keynes, the sky cleared and was darker than previously and I observed four more Perseids, including a really bright one at 00:30 UT when I was near Weedon. I arrived at Rugby at 00:45. By the time I commenced my return journey at 01.40 UT, it had clouded over. Work commitments prevented me from maintaining any kind of watch for meteors on the following evening.

Paul Whiting, FRAS, Devon. 11 August: I saw the ISS around 21:20 UT but very few Perseids because of light pollution. I then moved to the back garden looking NW and saw about 10 Perseids over an hour or so, all quite short and fast-moving. 12 August: I only watched for 20 minutes before cloud rolled in, during which time I saw just one very long (120°) medium-fast meteor around 21:20 UT. 13 August: I spent the day at the Norman Lockyer Observatory for the South West Astronomy Fair. I observed many huge meteors over France as radio pings from the GRAVES radar equipment near Broye-lès-Pes.

Some background:

<http://dk5ec.de/graves.htm>

<http://www.itr-datanet.com/~pe1itr/graves/>

For a pdf file: [Detection of Meteors by RADAR - British Astronomical Association](#)

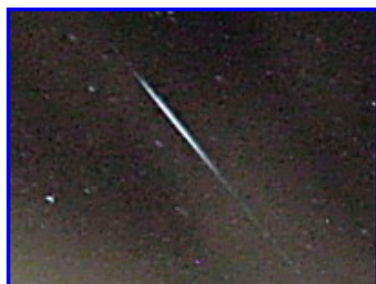
http://www.britastro.org/radio/projects/Detection_of_meteors_by_RADAR.pdf

Mike Nicholls, Vietnam. There was no chance of observations in Vietnam on 13 August due to cloudy skies and the occasional tropical storm - the best that I could manage was occasional glimpses of the Moon!

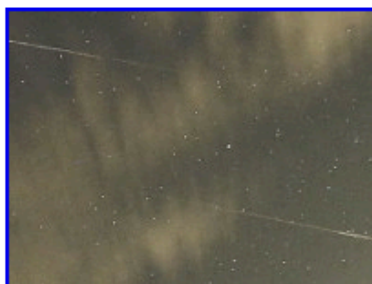
David Murton, Bucklesham. Below are my best photographs of the Perseids in 2016. The images taken on 11 August were captured through the clouds. There are a couple of interesting features in the images from 12 August:

The image at 21:13 UT captured M31, the Andromeda Nebula (visible in the full frame but not the thumbnail).

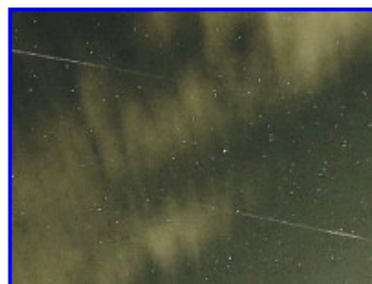
The lower portion of the image at 22:25 UT shows a satellite trail (not visible in the thumbnail). The meteor trail and satellite trail look clearly different.



11 August 2016, 22:27 UT



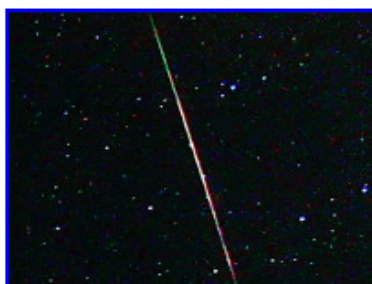
11 August 2016, 22:39 UT



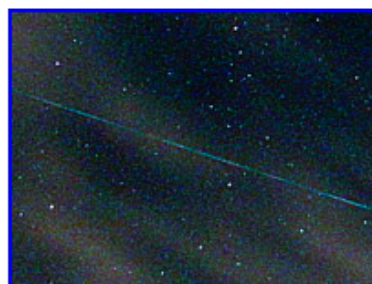
11 August 2016, 22:39 UT



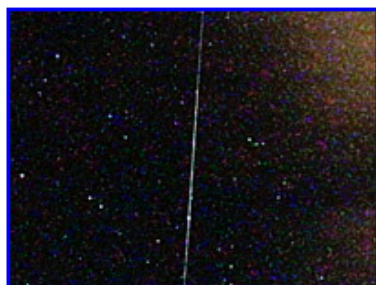
11 August 2016, 22:58 UT



11 August 2016, 23:06 UT



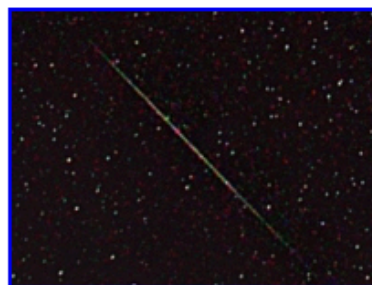
11 August 2016, 23:24 UT



11 August 2016, 23:31 UT



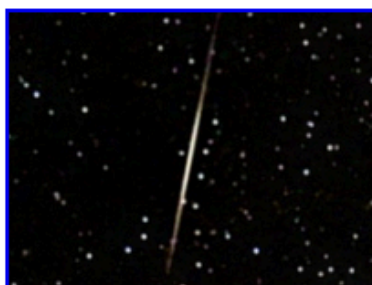
12 August 2016, 21:07 UT



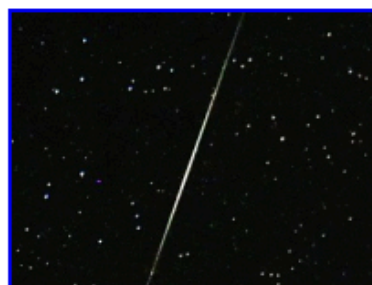
12 August 2016, 21:13 UT



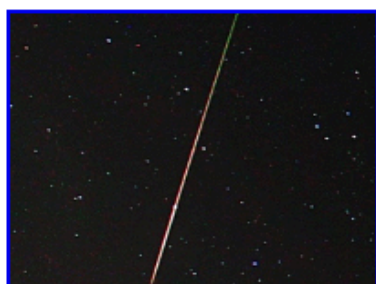
12 August 2016, 22:14 UT



12 August 2016, 22:23 UT



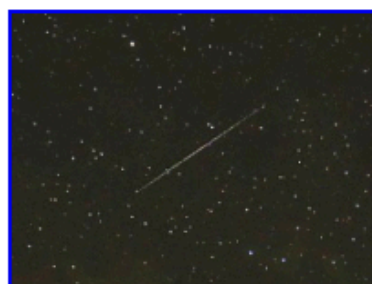
12 August 2016, 22:25 UT



12 August 2016, 23:04 UT



12 August 2016, 23:29 UT

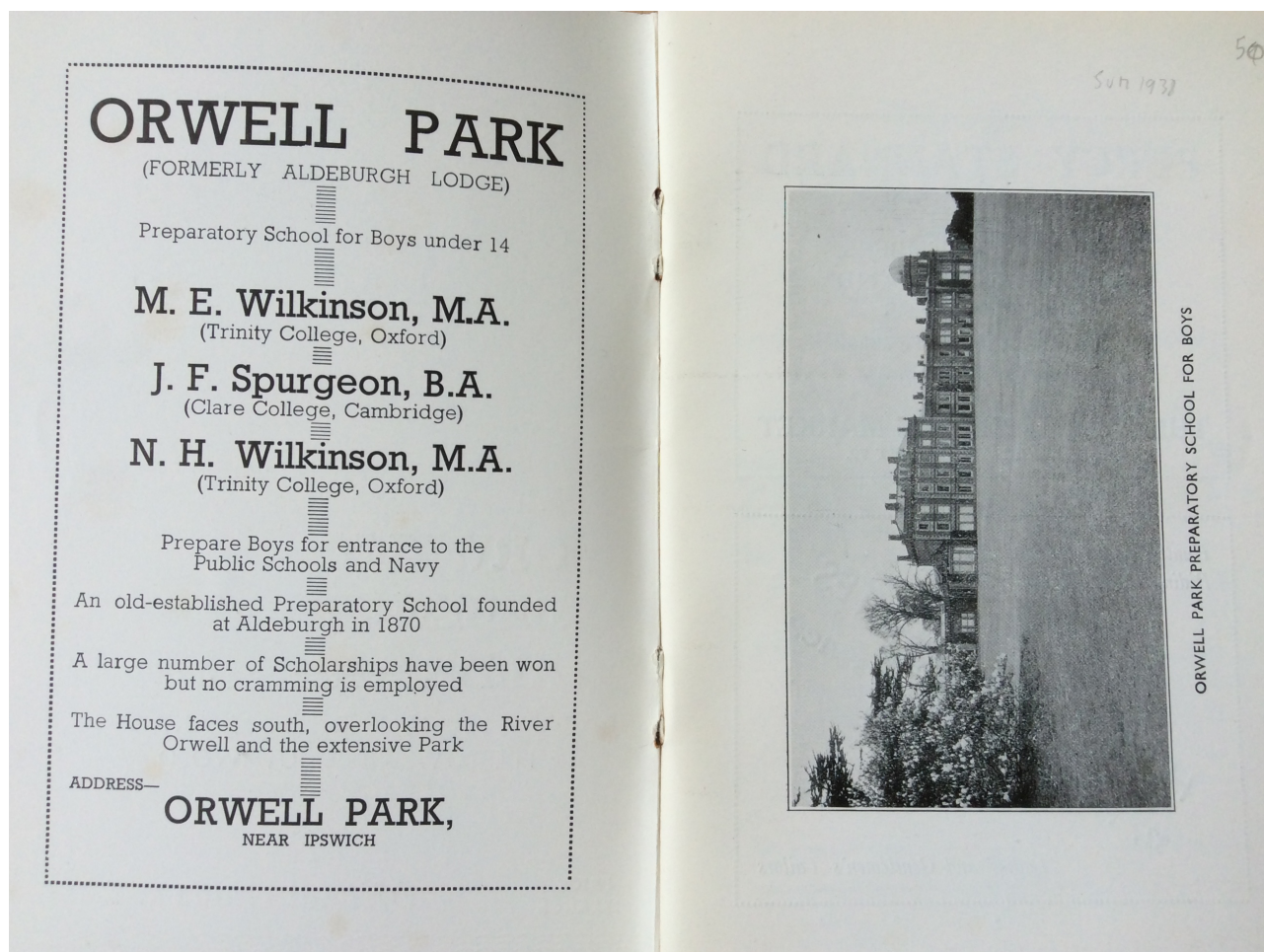


12 August 2016, 23:31 UT

Larger versions available at <http://www.oasi.org.uk/Obsvns/meteors/meteors.php>

History section

Bill Barton



From an undated (possibly 1938?) 'Official' guide to the Rivers Orwell Deben and Alde and the coast 'twixt Felixstowe & Southwold.

A local reference to Sir George Airy

Bill Barton FRAS

PLAYFORD CHURCH

Price 5p

The visitor who makes his way up the steep ascent to Playford Church along the tree-shaded path, the sharp rise broken by wide brick steps, cannot fail as he emerges at the top to be charmed by the cheerful brightness of its sunny churchyard, where the ox-eye daisies stand in the high grass at hay-season, clothing burial places, many of which are contemporary with the Church itself.

The Church tower and porch facing the wayfarer were built by Sir George Felbrigge, who died in 1400, and whose armorial bearings with those of his two wives, are sculptured round the entrance. Two features on the face of the tower may meet the enquiring eye. The small gracefully canopied niche -empty- that housed a stone statue of St. Mary, the patron saint pulled down and destroyed by Dowsing, the Cromwellian iconoclast, who with his men, despoiled such a number of the beautiful churches in this part of England. Above the niche is a cross, well and decoratively worked in faced flints. The whole church is a good example of the old art of building in knapped flint and mortar, common to these Eastern Counties, which boast no building stone in their light land, but afford a very copious supply of flints! The nave of the church appears older than the tower, and the chancel was rebuilt in comparatively modern times. In the churchyard on the left of the entrance door is a granite obelisk, raised to the memory of Thomas

Clarkson, "the friend of slaves" who, with the Parliamentary Wilberforce, was largely responsible for the abolition of slavery. One of the "few friends" who sponsored this tribute was a leading Quaker, and as the obelisk savoured to him of "graven images" he declined to subscribe, but apparently satisfied the tenets of his creed and every one else by bearing the entire cost of hauling the stone from Ipswich dock and placing it in its present position! Clarkson, born at Wisbech, spent the later part of his life as tenant of Playford Hall, and his remains rest, with his son and grandson, in an enclosure close to the chancel door.

Thomas Clarkson was an early friend and influence on the subsequent career of a man distinguished as the foremost mathematician and man of science of his time, **Sir George Biddell Airy, K.C.B.**, Astronomer Royal at Greenwich Observatory for nearly 50 years who rests with six members of his family in the enclosure next that of his lifelong friend. Bas-reliefs of both are placed in the church. Many headstones outside testify to the Biddells, an old farming family, several of whom became noteworthy characters in the county of Suffolk.

Upon entering, the visitor feels at once the bright lightness of the interior and can enjoy the main, indeed the only architectural feature of note, the chancel arch, so beautiful in the utter simplicity of its perfect proportion. In a pious but fussy Victorian age the present writer remembers that arch surrounded from capitol to capitol by a curved board covered with crimson flannel, bearing in white paper letters the admonition "Worship the Lord in the beauty of holiness"! Happily Time has taken vengeance on vandalism.

Advancing up to the chancel we come to our crowning possession, the brass representing the figure of the builder of the tower, Sir George Felbrigg, Esquire-at-Arms to Edward III, owner of Playford and large estates in Norfolk still bearing his name. This brass, one of the most famous in the country, and known to all archaeological experts for the beauty and exactness of the rendering of the complicated details of the armour of that early period, was originally placed on the floor of the nave over his grave, but an incumbent of the parish at a period when country livings, so called, provided but a mere pittance, was detected picking away the Latin inscription and canopy surrounding the figure and selling it as scrap metal at four pence per pound. Sir George Airy was instrumental in obtaining permission to remove the brass figure with the remains of the canopy and inscription, and place it in its present position, firmly cemented into the wall, where picking and stealing is more difficult and the brass is more easily available for inspection. Other memorial stones are to be seen in the floor of the chancel, commemorating the Sampson family, to whom the Playford properties descended by marriage with Sir George Felbrigg's daughter, and the Feltons by intermarriage with the Sampsons, which are worthy of notice by those interested in work of the period.

Until the early part of the 1800's a wooden gallery ran across the west end of the church to accommodate the "singers" and a village musician who played a kit. This band of talent called every Sunday at Sir George Airy's house in the lane close by the church, for loan of a metal tea-tray "to get the key-note", which unusual form of pitch-pipe was duly returned to the kitchen dresser after service! East Anglia is not generally considered as the most musical part of England. Later, as civilisation proceeded, a portable "hurdy-gurdy" which played six hymn tunes, was introduced with but limited success, as the mechanism jammed and the machine could not be silenced but, madly repeating the Old 100th, was removed to the churchyard to play itself out! In course of time the present organ was installed and the services proceed with decency.

To bring this retrospect up to the present time, our latest acquisition is the very tasteful small oak reredos behind the altar, the gift of Captain C. E. Boyle, Jnr., of the United States Army, a charming gesture from one whose forbears claim early connection with Playford.

When all is said, the greatest reward to the visitor may be the mellow brightness of this little, quiet, very old place of worship, bringing nearer the realisation of that "peace that passeth all understanding".

A. AIRY October, 1956.

Pictures at <http://www.suffolkchurches.co.uk/playford.html>

Noctilucent clouds

Roy Gooding



Taken at 03:40 on Tuesday 19th July.

I used my Canon SX700 HS compact camera. The camera was mounted on a gorilla tripod on the windowsill, and pointed through an open window. I had the camera set on automatic, when gave an exposure time of 1/8 second.

Astronomia italiana

James Appleton

Regular readers of the OASI *Newsletter* will doubtless recall that I contribute an occasional series of images showcasing an Italian view of astronomy in general, and matters pertaining to OASI in particular. The latest entry in the series is below, from summer 2016. The translation reads: *Lunar Park – open every evening throughout July and August*. Alas, no details are given of transport arrangements to and from the Moon...

